UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/783,849	02/15/2001	Antony Heatwole	PD-200219	2619

7590 07/19/2004	EXAMINER
Hughes Electronics Corporation	MEW, KEVIN D

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ART UNIT	PAPER NUMBER
2664	

DATE MAILED: 07/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE **3** MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 February 2001*.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-40* is/are pending in the application.
   4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) *1-3, 6, 11-13, 16, 21-23, 26, 31-33, 36* is/are rejected.
7)☒ Claim(s) *4-5, 7-10, 14-15, 17-20, 24-25, 27-30, 34-35, 37-40* is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on *2/15/2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.
   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a)☐ All   b)☐ Some * c)☐ None of:
   1.☐ Certified copies of the priority documents have been received.
   2.☐ Certified copies of the priority documents have been received in Application No. _____.
   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
      application from the International Bureau (PCT Rule 17.2(a)).
   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Detailed Action

Drawings

1.   The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because

they include the following reference character(s) not mentioned in the description:

reference numeral 211 in Fig. 2. Corrected drawing sheets, or amendment to the

specification to add the reference character(s) in the description, are required in reply to

the Office action to avoid abandonment of the application. Any amended replacement

drawing sheet should include all of the figures appearing on the immediate prior version

of the sheet, even if only one figure is being amended. The replacement sheet(s) should

be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to

obstruct any portion of the drawing figures. If the changes are not accepted by the

examiner, the applicant will be notified and informed of any required corrective action in

the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2.   The abstract of the disclosure is objected to because the abstract should not

include the title of the application. The title "APPORTIONING BANDWIDTH

CAPACITY IN COMMUNICATION SYSTEMS" should be removed from the abstract.

Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set
forth in section 102 of this title, if the differences between the subject matter sought to be patented and
the prior art are such that the subject matter as a whole would have been obvious at the time the
invention was made to a person having ordinary skill in the art to which said subject matter pertains.
Patentability shall not be negatived by the manner in which the invention was made.

3.   **Claims 1-3, 6, 11-13, 16, 21-23, 26, 31-33, 36** are rejected under 35 U.S.C.

103(a) as being unpatentable over Struhsaker et al. (USP 6,434,129).

Regarding claims 1, 11, 21, 31, Struhsaker discloses a communication switching

system (**a wireless communication system**, see lines 7-8, col. 3) and a computer-

readable medium carrying one or more sequences of one or more instructions (it is

inherent that the system comprises computer software instructions to perform dynamic

pool sizing) to perform the method of allocating system capacity (**for providing**

dynamic pool sizing in a pool of independent CDMA channels, see lines 55-56, col. 3

and lines 1-2, col. 16) to a plurality of CDMA channels in a communication switching

system, the capacity being partitioned into a provisioned portion (**traffic channel pool**

and micro-channel bank in the alternate service pool, see Fig. 9) and an

unprovisioned portion (**alternate service pool except the micro-channel bank**, see Fig.

9), a portion of the CDMA channels constituting a pool (**a pool of CDMA traffic**

channels) having a plurality of sub-pools (**this traffic channel pool of channels is**

divided into smaller pools of CDMA channels providing specific service between the

subscriber terminal and the base station, see lines 2-5, col. 16; note that the traffic

channel pool is interpreted as the pool here), the method comprising:

a control computer (**a base station**, see lines 28-31, col. 5 and element 202, Fig. 2) being configured for allocating the provisioned portion of the capacity to the plurality of sub-pools of the traffic channel pool, the provisioned portion of the capacity being arranged into sub-partitions (**traffic channel pool is one partition and micro-channel bank is another partition**, see Fig. 9), wherein one of the sub-partitions (**micro-channel bank**) is not associated with the sub-pools of traffic channel pool (**micro-channel bank is not associated with the subpools of the traffic channel pool**, see Fig. 9), and remaining subpartitions (**other channels in the subpools of the traffic channel pool**, see Fig. 9) are associated with the sub-pools of traffic channel pool (**other channels in the subpools of the traffic channel pool are associated with the subpools**, see Fig. 9);

selectively allocating available capacity from the sub-partitions to one of the sub-pool CDMA channels (**micro-channel bank MCB uses between 3 and 8 CDMA channels which are removed from the overall CDMA channel pool**, see lines 24-28, col. 7) to permit overflow of traffic from the one sub-pool CDMA channel (**MCB is provided for dynamic addition of CDMA channels based on subscriber demand**, see lines 32-34, col. 7); and

selectively allocating the unprovisioned portion of the capacity (**alternate service pool except the micro-channel bank and base control/subscriber call access and base pilot/subscriber TX acquisition are interpreted as unprovisioned portion of the capacity**, see Fig. 9) to the pool to permit overflow of traffic from a CDMA channel within the pool (**remove channels from the overall CDMA channel pool**, see lines 25-27, col. 7) and to a CDMA channel that is not a part of the pool of CDMA channels

(allocating channels to micro-channel bank MCB as usage demands and MCB that

is not part of the traffic channel pool, see lines 21-34, col. 7).

Struhsaker does not explicitly show that the system capacity is allocated to a

plurality of terminals. However, Struhsaker does specifically teach that the system

capacity is dynamically allocated to CDMA channels, as described above. It is also well

known in the art teaching that a CDMA channel is assigned to a mobile terminal

subscriber in order to communicate traffic data.

Therefore, it would have been obvious to one ordinary skill in the art at the time

the invention was made to modify the system capacity allocation method and system of

Struhsaker such that the capacity allocation of Struhsaker is allocated to a plurality of

mobile terminals via the CDMA channels such as the dynamic CDMA channel allocation

taught by Struhsaker. The motivation to do so is to perform dynamic pool sizing of

CDMA channels for mobile terminals in order to dynamically adjust bandwidth to satisfy

service requirements by providing the appropriate bandwidth as needed because the

bandwidth would then be utilized more effectively to improve overall system

performance and to increase the processing gain of the system.

Regarding claims 2, 12, 22, 32, Struhsaker discloses the method according to

claims 1, 11, 21, 31, respectively, wherein the partitions and sub-partitions of the capacity

specify a maximum transmission rate for the corresponding terminals (**dynamic**

switching of rates up to 64K can be supported, see lines 28-30, col. 18).

4.   Claims 3, 13, 23, 33 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Struhsaker et al. in view of Graves et al. (USP 6,741,572).

Regarding claims 3, 13, 23, 33, Struhsaker discloses all the aspects of the claimed

invention set forth in the rejection of claims 1, 11, 21, 31, respectively, except fails to

disclose a communication switching system (**a wireless communication system**, see

lines 7-8, col. 3) and a computer-readable medium carrying one or more sequences of one

or more instructions to perform the method according to claim 1, further comprising:

configuring the partition and sub-partitions of the capacity based upon a prescribed time-

of-day profile. However, Graves discloses a centrally provisioned network that is based

on time-of-day traffic (see lines 21-25, col. 10, Table1). Therefore, it would have been

obvious to one ordinary skill in the art at the time the invention was made to modify

system capacity allocation method and system of Struhsaker such that the capacity

allocation of Struhsaker is based on a prescribed time-of-day profile such as the time-of-

day traffic characteristic being used for traffic provisioning taught by Graves. The

motivation to do so is to allocate more capacity resources to the network during the time

of day when the traffic is heavy because more channels can be dynamically allocated

only to satisfy certain periods of large bandwidth demand of the day so that the

bandwidth would be utilized more effectively to improve overall system performance and

to increase the processing gain of the system.

5.   Claims 6, 16, 26, 36 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Struhsaker et al. in view of Rudrapatna et al. (USP 5,592,470).

        Regarding claims 6, 16, 26, 36, Struhsaker discloses all the aspects of the claimed

invention set forth in the rejection of claims 1, 11, 21, 31, respectively, except fails to

disclose a communication switching system (**a wireless communication system**, see

lines 7-8, col. 3) and a computer-readable medium carrying one or more sequences of one

or more instructions to perform the method according to claim 1, wherein the

communication switching system is a satellite network. However, Rudrapatna discloses a

wireless broadband communication system in a satellite network (see line 40, col. 1 and

lines 17-19, col. 3) in which the bandwidth of delivery is dynamically adjusted to satisfy

requirements by providing bandwidth on demand (see lines 47-54, col. 1). Therefore, it

would have been obvious to one ordinary skill in the art at the time the invention was

made to modify system capacity allocation method and system of Struhsaker such that

the capacity allocation of Struhsaker is implemented for a satellite network such as the

one taught by Rudrapatna. The motivation to do so is to allow the system to accept

satellite signals to support broadcast video and multimedia services because real-time

signals are provided via the satellite to support real-time multimedia services.

Allowable Subject Matter

6.   Claims 4-5, 7-10, 14-15, 17-20, 24-25, 27-30, 34-35, 37-40 are objected to as

being dependent upon a rejected base claim, but would be allowable if rewritten in

independent form including all of the limitations of the base claim and any intervening

claims.

The following is a statement of reasons for the indication of allowable subject

matter:

In claim 4, the method according to Claim 1, further comprising:

receiving a bandwidth request message from one of the terminals, the one

terminal being configured to submit the bandwidth request message that selectively

requests capacity from the provisioned portion and the unprovisioned portion based upon

a type of traffic received by the one terminal.

In claim 7, Struhsaker discloses the method according to Claim 6, wherein each of

the terminals is configured to receive high volume traffic and to transmit the traffic to a

satellite of the satellite network in response to at least one of the allocating steps.

In claim 14, the system according to Claim 11, wherein the terminals are

configured to transmit a bandwidth request message that selectively requests capacity

from the provisioned portion and the unprovisioned portion based upon a type of traffic

received by the one terminal.

In claim 24, the computer readable medium according to Claim 21, wherein the

one or more processors further perform the step of:

receiving a bandwidth request message from one of the terminals, the one

terminal being configured to submit the bandwidth request message that selectively

requests capacity from the provisioned portion and the unprovisioned portion based upon

a type of traffic received by the one terminal.

In claim 27, the computer readable medium according to Claim 26, wherein each

of the terminals is configured to receive high volume traffic and to transmit the traffic to

a satellite of the satellite network in response to at least one of the allocating steps.

In claim 34, the system according to Claim 31, further comprising:

means for receiving a bandwidth request message from one of the terminals, the

one terminal being configured to submit the bandwidth request message that selectively

requests capacity from the provisioned portion and the unprovisioned portion based upon

a type of traffic received by the one terminal.

In claim 37, the system according to Claim 32, wherein each of the terminals is

configured to receive high volume traffic and to transmit the traffic to a satellite of the

satellite network in response to at least one of the allocations.

Conclusion

7.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure with respect to apportioning bandwidth capacity in communication

switching system.

US Patent 6,668,174 to Struhsaker et al.

US Patent 4,763,325 to Wolfe et al.

US Patent 6,223,219 to Uniacke et al.

US Patent 6,647,428 to Bannai et al.

US Patent 6,493,804 to Soltis et al.

US Publication 2002/0035559 to Crowe et al.

US Publication 2003/0198241 to Putcha et al.

8.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Kevin Mew whose telephone number is 703-305-5300.

The examiner can normally be reached on 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Wellington Chin can be reached on 703-305-4366. The fax phone number for

the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only. For

more information about the PAIR system, see http://pair-direct.uspto.gov. Should you

have questions on access to the Private PAIR system, contact the Electronic Business

Center (EBC) at 866-217-9197 (toll-free).

KDM
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